

DoD Global, Laboratory-Based, Influenza Surveillance Program



USAF School of Aerospace Medicine

2014 - 2015

Cumulative Results

Locations	88
Collected	5,700
Tested	5,582



Respiratory Highlights

12-25 April 2015 (Surveillance Weeks 15 & 16)

- During 12-25 April 2015, a total of 92 specimens were collected and received from 33 locations. Results were finalized for 42 specimens from 23 locations. During Week 15, the laboratory identified five influenza B. During Week 16, two influenza B were identified.
- Flu activity continues to decline, according to the most recent [FluView](#), which reports that influenza-like-illness (ILI) in the United States has fallen below baseline for the second consecutive week since the middle of November. Other key indicators are declining as well, signaling that the 2014-2015 flu season is drawing to a close. A notable characteristic of the 2014-2015 influenza season is that antigenic and genetic characterization of influenza-positive respiratory specimens submitted to CDC indicated that most of the circulating influenza A (H3N2) viruses were different or “drifted” from the H3N2 vaccine virus. The predominance of drifted influenza A (H3N2) viruses likely resulted in reduced vaccine effectiveness (VE) observed against H3N2 viruses this season ([CDC Report](#), cited 28 April 2015).

Influenza A 1,786

A(H1N1)pdm09	3
A(H3N2)	1,778
A & B	1
A & Parainfluenza	1
A(H3N2) & B/Victoria & Adenovirus & Rhino/Enterovirus	1
A(H3N2) & Coronavirus	1
A(H3N2) & Rhino/Enterovirus	1

Influenza B 247

B/Unknown or pending lineage*	208
B & Rhino/Enterovirus	1
B/Victoria	12
B/Yamagata	26

Other Respiratory Pathogens 987

Adenovirus	105
<i>Bordetella pertussis</i>	0
<i>Chlamydia pneumoniae</i>	2
Coronavirus	88
Human Metapneumovirus	58
<i>Mycoplasma pneumoniae</i>	31
Parainfluenza	148
RSV	206
Rhino/Enterovirus	242
Non-influenza Co-infections	107

Lab data are current as of 27 April 2015. Results are preliminary and may change as more results are received.
*USAFSAM does not sequence all influenza B specimens to determine lineage.

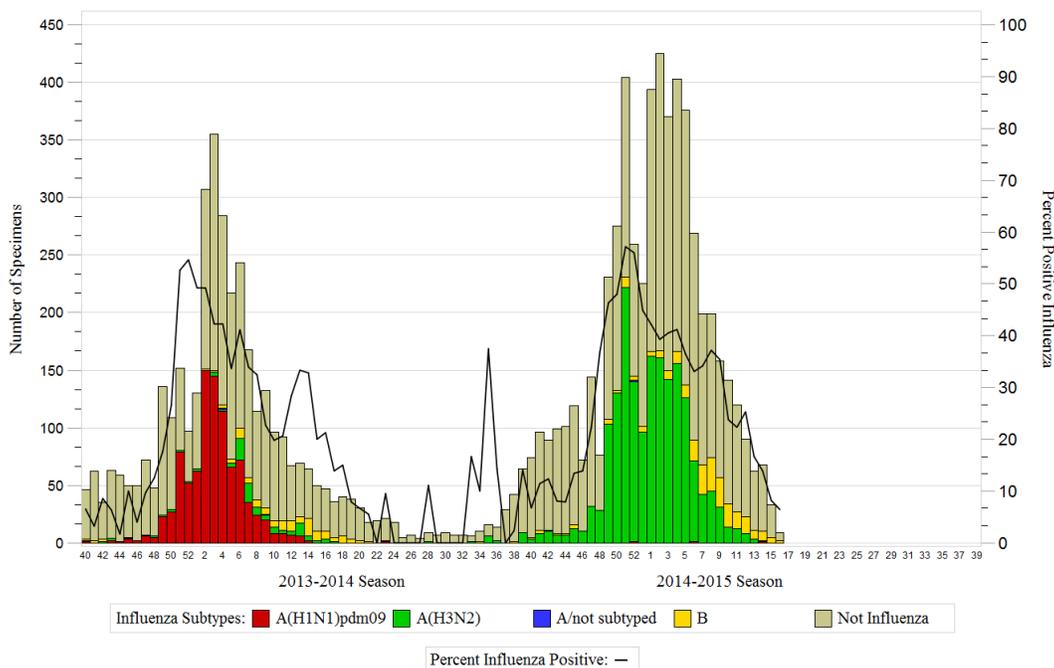
Table 1. Results by region and location for specimens collected and finalized during Weeks 15 & 16

Region*		B	Adenovirus	Coronavirus	hMPV	Parainfluenza	Para & Rhino/Entero	No Pathogen	Total
PACOM	Misawa AB, Japan	-	-	-	-	-	-	1	1
Region 2	Ft Drum, NY	1	1	1	-	-	-	2	5
	JB McGuire-Dix-Lakehurst, NJ	1	-	-	-	-	-	-	1
	USMA - West Point, NY	1	-	-	-	-	-	1	2
Region 3	Dover AFB, DE	-	-	-	-	-	-	1	1
	JB Langley-Eustis, VA	-	-	-	-	-	-	1	1
Region 4	Eglin AFB, FL	-	-	-	-	-	1	1	2
	Hurlburt Field, FL	-	-	-	-	1	-	-	1
	Keesler AFB, MS	-	-	-	-	-	-	1	1
	Maxwell AFB, AL	-	-	-	-	-	-	1	1
	Moody AFB, GA	-	1	-	3	1	-	1	6
Region 6	Altus AFB, OK	-	-	-	-	1	-	-	1
	Cannon AFB, NM	-	-	-	-	1	-	-	1
	Sheppard AFB, TX	-	-	-	-	1	-	-	1
Region 7	Tinker AFB, OK	-	-	-	-	2	-	2	4
	Offutt AFB, NE	-	-	-	-	-	-	2	2
Region 8	Ellsworth AFB, SD	1	-	-	-	-	-	1	2
	FE Warren AFB, WY	-	-	-	-	-	-	1	1
	Hill AFB, UT	1	-	-	-	-	-	-	1
Region 9	Davis-Monthan AFB, AZ	1	-	-	-	-	-	-	1
	Edwards AFB, CA	1	-	-	-	-	-	1	2
	Travis AFB, CA	-	-	-	-	1	-	1	2
Region 10	NH Bremerton, WA	-	-	-	-	-	-	2	2
Total		7	2	1	3	8	1	20	42

*US Regions are based on Health & Human Services regions. Other locations are defined by COCOM.

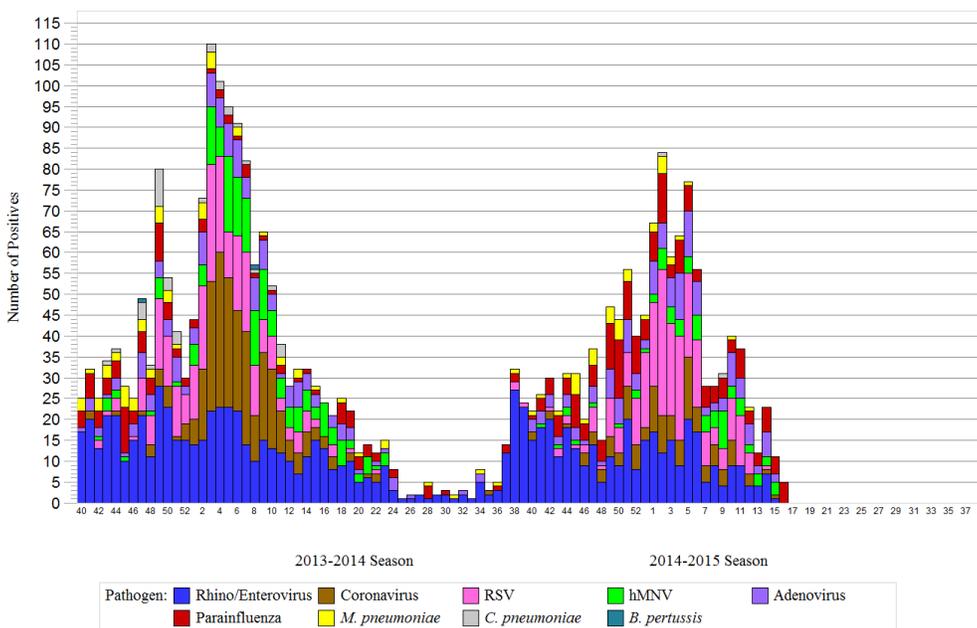
Laboratory Results - Cumulative for Season

Graph 1. Percent influenza positive by week: 2013-2014 surveillance year and through Week 16 of the 2014-2015 surveillance year



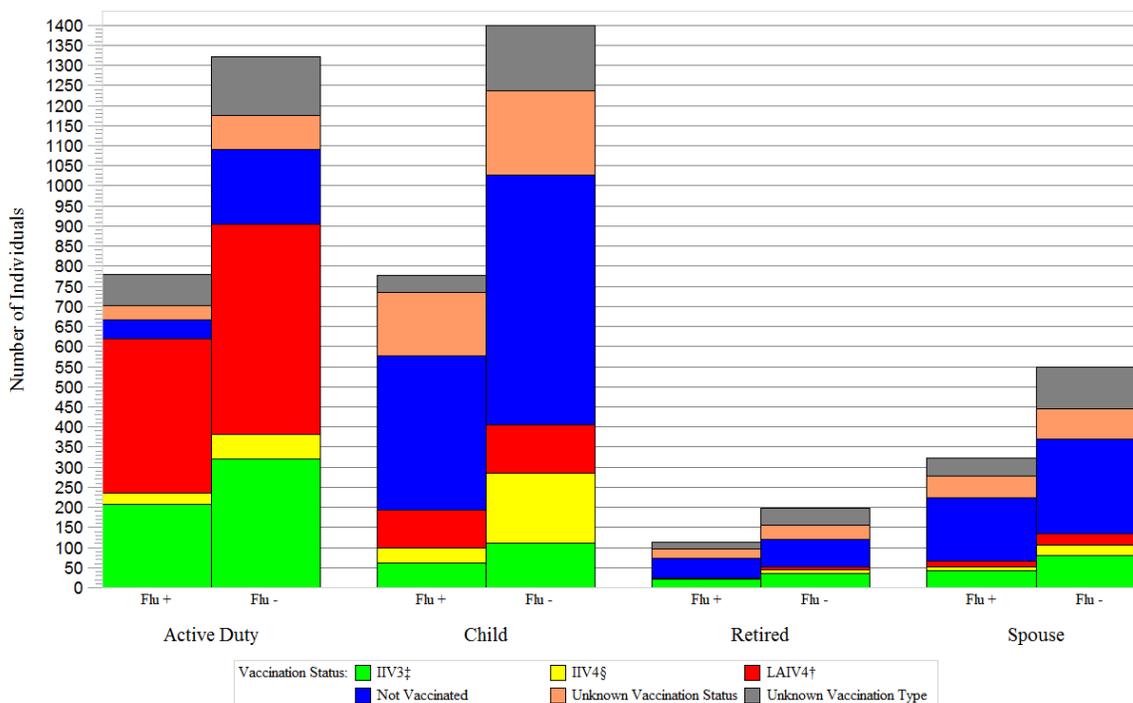
Note: One specimen positive for influenza A(H3N2)v has been excluded from the graph during the 2013-2014 season. Additionally, dual influenza co-infections are excluded from this graph. Specimens with pending results are used in the denominator to calculate percent positive, but are not displayed in the graph.

Graph 2. Other respiratory pathogen results by week: 2013-2014 surveillance year and through Week 16 of the 2014-2015 surveillance year



Note: Due to change in protocol between the surveillance years 2013-2014 and 2014-2015, a direct comparison between the years cannot be made.

Graph 3. Vaccination status by beneficiary type for the 2014-2015 surveillance year through Week 16



‡ Influenza, inactivated vaccine (trivalent)
 § Influenza, inactivated vaccine (quadrivalent)
 † Live, attenuated influenza vaccine (quadrivalent)

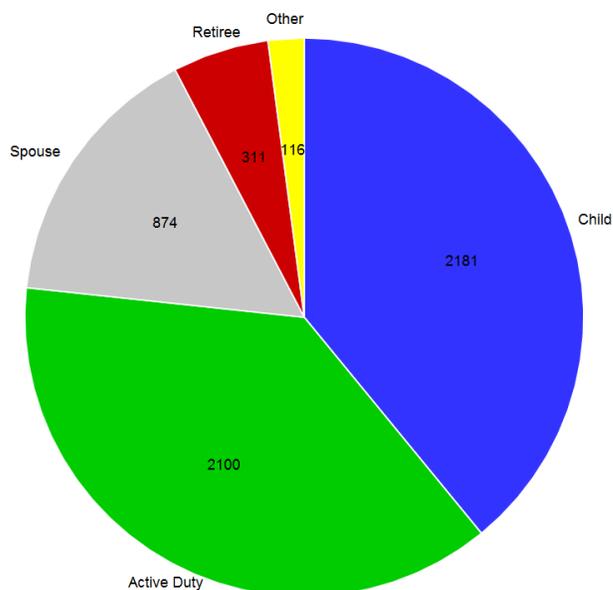
Table 2. ILI by age group for the 2014-2015 surveillance year through Week 16

Age Group	Frequency	Percent
0-5	1,203	21.55
6-9	434	7.77
10-17	546	9.78
18-24	792	14.19
25-44	1,863	33.38
45-64	570	10.21
65+	163	2.92
Unknown	11	0.20

Demographic Summary

Of 5,582 ILI cases, 2,100 are service members (37.6%), 2,181 are children (39.1%), 874 (15.7%) are spouses, and 427 (7.6%) are retirees & other beneficiaries. The median age of ILI cases with known age (n=5,571) is 23 (range 0, 94) and 2,183 (39.1%) of these specimens are from ILI cases less than 18 years of age.

Graph 4. ILI by beneficiary status for the 2014-2015 surveillance year through Week 16



Laboratory Results—Through Current Surveillance Week 16

Table 3. Cumulative results by region and location for specimens collected during the 2014-2015 surveillance year

Region*		A(H1N1)pdm09	A(H3N2)	A/not subtyped & Para	A(H3N2) & B/Victoria & Adeno & Rhino/Entero	A(H3N2) & Corona	A(H3N2) & Rhino/Entero	Influenza A & B	B	B/Victoria	B/Yamagata	B & Rhino/Entero	Adenovirus	C. pneumoniae	Coronavirus	hMPV	M. pneumoniae	Parainfluenza	RSV	Rhinovirus/Enterovirus	Non-Influenza Co-Infection	No Pathogen	Total	
Deployed	Country 1, Location B	-	26	-	-	-	-	1	-	-	-	-	-	-	4	2	-	-	-	12	3	46	94	
	Country 2, Location A	1	48	-	-	-	1	5	-	3	-	-	-	-	-	-	-	-	-	6	1	27	92	
	Country 3, Location A	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
PACOM	CFA Okinawa, Japan	-	4	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2	-	20	28	
	Camp Zama, Japan	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	
	Eielson AFB, AK	-	6	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	1	-	8	18	
	JB Elmendorf-Richardson, AK	-	7	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	5	14	
	JR Marianas - Andersen AFB, Guam	-	11	-	-	-	-	1	-	4	-	5	-	-	3	-	1	3	5	1	25	59		
	JR Marianas - NH Guam, Guam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
	Kadena AB, Japan	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	6	12	
	Kunsan AB, South Korea	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	12
	Misawa AB, Japan	-	10	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2	-	11	24	
	Osan AB, South Korea	-	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	22
	Tripler AMC, HI	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
	Yokota AB, Japan	-	80	-	-	-	-	1	-	1	-	2	-	2	4	-	1	-	4	1	25	121		
	Region 1	Hanscom AFB, MA	-	24	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3	1	-	26	55
		NHCNE Newport, RI	-	16	-	-	-	-	3	-	-	-	1	-	-	-	-	-	-	2	1	2	20	45
USCG Academy, CT		-	10	-	-	-	-	1	-	-	-	1	-	-	1	1	-	1	2	1	11	28		
Region 2	Ft Drum, NY	-	64	-	-	-	-	19	-	2	-	5	-	5	4	1	4	10	19	9	60	202		
	JB McGuire-Dix-Lakehurst, NJ	-	32	-	-	1	-	2	-	-	-	-	-	-	-	-	-	2	4	1	28	70		
	USMA - West Point, NY	1	93	-	-	-	-	10	-	-	-	5	-	9	2	4	7	12	6	5	147	301		
Region 3	CG Base Portsmouth, VA	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	
	Dover AFB, DE	-	21	-	-	-	-	1	-	-	-	-	1	1	1	1	1	1	-	-	-	17	43	
	JB Anacostia-Bolling, DC	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	
	JB Andrews, MD	-	4	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	2	-	4	12	
	JB Langley-Eustis, VA	-	7	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	1	-	1	12	22	
	NCRM - Ft Belvoir CH, VA	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	1	4	1	4	11	
	NCRM - Walter Reed NMMC, MD	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	3	
	NMC Portsmouth, VA	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	
Region 4	CGS Mobile, AL	-	11	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	-	4	18	
	Columbus AFB, MS	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	26	
	Eglin AFB, FL	-	14	-	-	-	-	4	-	1	-	2	-	-	-	1	2	6	1	4	49	84		
	Ft Bragg, NC	-	30	-	-	-	-	-	-	-	-	2	-	3	2	-	2	7	3	2	36	87		
	Ft Campbell, KY	-	30	-	-	-	1	1	-	-	-	5	-	1	1	-	4	2	6	3	37	91		
	Hurlburt Field, FL	-	22	-	-	-	1	-	-	-	-	3	-	-	-	1	1	4	7	2	36	77		
	JB Charleston (AF), SC	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	14	
	JB Charleston (Navy), SC	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2	-	2	5	
	Keesler AFB, MS	-	6	-	-	-	-	1	1	-	-	3	-	-	-	-	1	2	1	2	24	41		
	MacDill AFB, FL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	
	Maxwell AFB, AL	-	31	-	-	-	-	12	-	3	-	2	-	2	1	-	1	1	5	-	79	137		
	Moody AFB, GA	-	92	-	-	-	-	6	2	2	-	15	-	8	9	1	9	5	17	9	90	265		
	NH Beaufort, SC	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	2	1	14	20	
	NH Camp Lejeune, NC	-	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	9	74	
	NH Jacksonville, FL	-	1	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	4	1	-	8	
	Patrick AFB, FL	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	
	Robins AFB, GA	-	35	-	-	-	-	4	-	1	-	1	-	3	1	-	-	-	-	-	-	40	85	
	Seymour Johnson AFB, NC	-	15	-	-	-	-	-	-	-	-	-	1	-	-	-	1	3	4	-	13	37		
	Shaw AFB, SC	-	7	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2	-	10	21		
	Tyndall AFB, FL	-	14	-	-	-	-	-	-	3	-	4	-	1	1	-	-	-	2	1	1	15	42	
USCG Base Elizabeth City, NC	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4		

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Laboratory Results—Through Current Surveillance Week 16

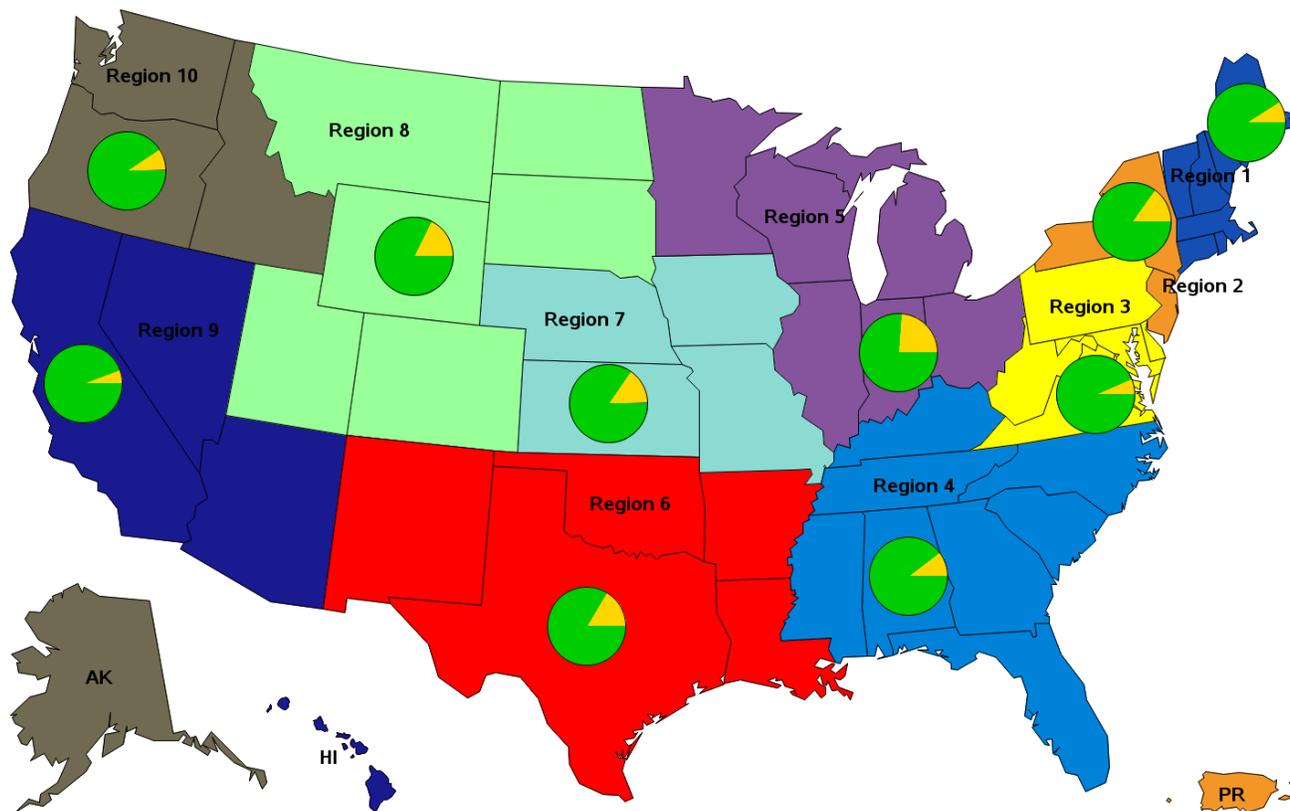
Table 3. Cumulative results by region and location for specimens collected during the 2014-2015 surveillance year (Continued from Page 4)

Region*	A(H1N1)pdm09	A(H3N2)	A/not subtyped & Para	A(H3N2) & B/Victoria & Adeno & Rhino/Entero	A(H3N2) & Corona	A(H3N2) & Rhino/Entero	Influenza A & B	B	B/Victoria	B/Yamagata	B & Rhino/Entero	Adenovirus	C. pneumoniae	Coronavirus	hMPV	M. pneumoniae	Para-influenza	RSV	Rhinovirus/Enterovirus	Non-Influenza Co-Infection	No Pathogen	Total	
Region 5	Scott AFB, IL	-	23	-	-	-	-	11	-	-	-	2	-	1	1	-	2	2	2	-	33	77	
	Wright-Patterson AFB, OH	-	12	-	-	-	-	-	-	-	-	-	-	4	1	-	-	4	7	-	36	64	
Region 6	Altus AFB, OK	-	16	-	-	-	-	6	-	-	1	3	-	1	-	-	5	7	3	2	112	156	
	Barksdale AFB, LA	-	10	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	1	10	23	
	Cannon AFB, NM	-	4	-	-	-	-	1	-	-	-	-	-	1	-	-	1	1	-	-	8	16	
	Ft Hood, TX	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
	Holloman AFB, NM	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
	Laughlin AFB, TX	-	9	-	-	-	-	-	-	-	-	1	-	1	-	2	2	3	3	2	15	38	
	Little Rock AFB, AR	-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	33	52	
	SAMMC, TX	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	
	Sheppard AFB, TX	-	69	-	-	-	-	7	1	-	-	3	-	6	1	1	4	5	5	7	96	205	
	Tinker AFB, OK	-	123	-	1	-	-	28	4	1	-	2	1	5	7	1	11	22	10	7	186	409	
	USCG New Orleans, LA	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Vance AFB, OK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	3	
Region 7	Ft Leavenworth, KS	-	5	-	-	-	-	-	-	-	-	2	-	1	1	-	-	1	1	-	13	24	
	McConnell AFB, KS	-	38	1	-	-	1	4	-	-	-	-	-	3	-	-	-	-	4	-	26	77	
	Offutt AFB, NE	-	67	-	-	-	-	14	-	1	-	3	-	5	-	2	8	1	11	1	134	247	
Region 8	Buckley AFB, CO	-	2	-	-	-	-	3	-	-	-	-	-	1	-	-	-	1	1	-	9	17	
	Ellsworth AFB, SD	-	30	-	-	-	-	15	1	2	-	2	-	5	-	4	7	1	3	2	37	109	
	FE Warren AFB, WY	-	35	-	-	-	-	10	1	-	-	2	-	-	-	-	14	3	3	2	37	107	
	Hill AFB, UT	-	34	-	-	-	-	1	-	1	-	-	-	-	-	2	3	4	6	2	30	83	
	Malmstrom AFB, MT	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	1	-	2	10
	Minot AFB, ND	-	19	-	-	-	-	1	-	-	-	2	-	3	1	3	5	11	3	3	30	81	
	Peterson AFB, CO	-	50	-	-	-	-	5	-	-	-	-	-	-	-	1	3	3	4	2	37	105	
	USAF Academy, CO	-	26	-	-	-	-	3	-	-	-	-	-	-	-	1	1	-	1	-	29	61	
Region 9	Beale AFB, CA	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
	Davis-Monthan AFB, AZ	-	25	-	-	-	-	2	-	-	-	-	-	2	2	-	1	1	1	1	43	78	
	Edwards AFB, CA	-	8	-	-	-	-	3	-	-	-	-	-	-	-	-	2	-	-	-	12	25	
	Los Angeles AFB, CA	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
	Luke AFB, AZ	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	14	28	
	Nellis AFB, NV	-	19	-	-	-	-	2	-	1	-	1	-	-	-	-	-	2	2	-	26	53	
	Travis AFB, CA	-	56	-	-	-	-	1	-	-	-	1	-	2	1	2	12	18	12	3	191	299	
	USCG Island Alameda, CA	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	8	
Vandenberg AFB, CA	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	22		
Region 10	CGS North Bend, OR	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3
	Fairchild AFB, WA	-	22	-	-	-	-	2	-	-	-	1	-	2	2	-	1	7	1	1	10	49	
	Mt Home AFB, ID	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	7	21	
	NH Bremerton, WA	1	87	-	-	-	-	9	-	-	-	15	1	4	6	2	21	38	27	16	325	552	
Total	3	1778	1	1	1	1	1	208	12	26	1	105	2	88	58	31	148	206	242	107	2562	5582	

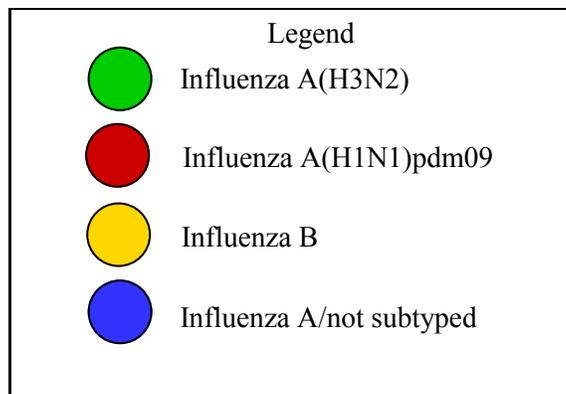
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Map 1. Percentage of influenza positives by region for the 2014-2015 surveillance year through Week 16

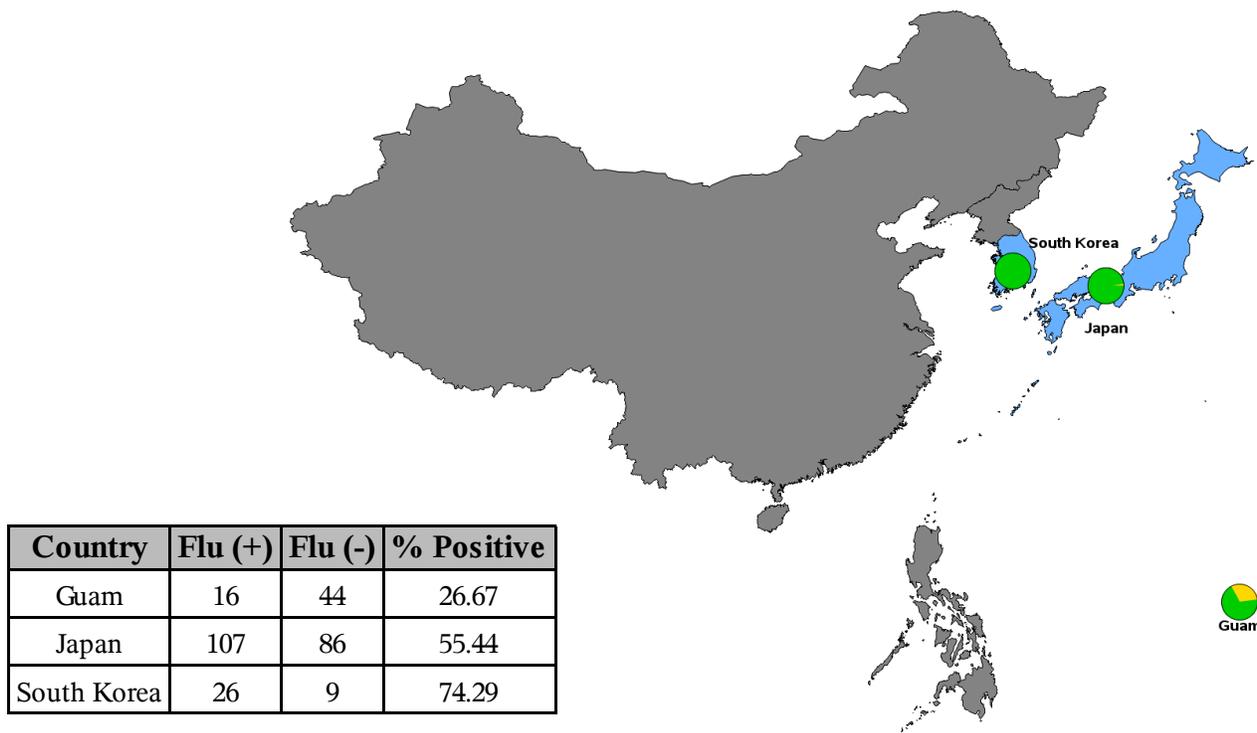


Region	Flu (+)	Flu (-)	% Positive
Region 1	55	73	42.97
Region 2	224	354	38.75
Region 3	45	59	43.27
Region 4	439	714	38.07
Region 5	46	96	32.39
Region 6	306	611	33.37
Region 7	130	219	37.25
Region 8	243	334	42.11
Region 9	159	381	29.44
Region 10	148	518	22.22

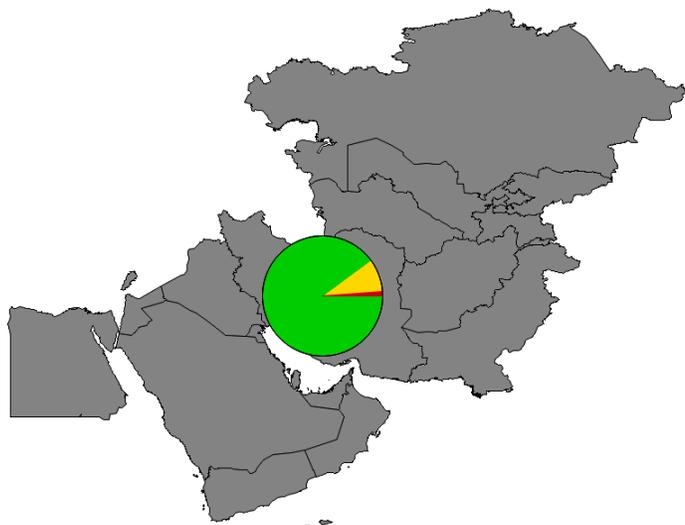


DoD Global, Laboratory-Based, Influenza Surveillance Program

Map 2. Percentage of influenza positives by country for the 2014-2015 surveillance year through Week 16 (Pacific)



Map 3. Percentage of influenza positives by country for the 2014-2015 surveillance year through Week 16 (CENTCOM)



*Note – Specimens for CENTCOM were tested at USAFSAM or Landstuhl Regional Medical Center (LRMC).

Country	Flu (+)	Flu (-)	% Positive
Country 1	27	82	24.77
Country 2	58	34	63.04
Country 3	2	0	100
Country 6	2	38	5

Legend

- Influenza A(H3N2)
- Influenza A(H1N1)pdm09
- Influenza B
- Influenza A/not subtyped

Countries marked in blue contain sentinel sites

DoD Global Laboratory-Based Influenza Surveillance Program

USAF School of Aerospace Medicine

2014 - 2015

Respiratory Surveillance
2014-2015 Year
(beginning 28 September 2014)



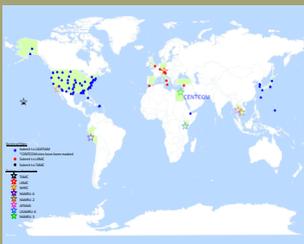
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Contributions to the CDC for National Influenza Surveillance

All sequence data are sent to the CDC and selected original specimens or isolates are sent for further characterization and possible use as influenza vaccine seed viruses. Specimens may also undergo antiviral testing.

[DoD Global Influenza Surveillance Program](https://gumbo2.area52.afnoapps.usaf.mil/epi-consult/influenza)

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gumbo2.area52.afnoapps.usaf.mil
/epi-consult/influenza

Background

The DoD-wide program was established by the Global Emerging Infections Surveillance and Response System (GEIS) in 1997. The surveillance network includes the U.S. Air Force School of Aerospace Medicine (USAFSAM) (sentinel site respiratory surveillance), the Naval Health Research Center (recruit and shipboard population-based respiratory surveillance), the Naval Medical Research Unit (NAMRU-3) in Cairo, Egypt, the Naval Medical Research Unit (NAMRU-2) in Phnom Penh, Cambodia, the Armed Forces Research Institute of Medical Sciences (AFRIMS) in Bangkok, Thailand, the Naval Medical Research Unit-6 (NAMRU-6) in Lima, Peru, and the United States Army Medical Research Unit-Kenya (USAMRU-K) located in Nairobi, Kenya. This work is supported by the Air Force and the Division of Global Emerging Infections Surveillance and Response System (GEIS) Operations, a Division of the Armed Forces Health Surveillance Center (AFHSC).

Sentinel Site Surveillance at USAFSAM

In 1976, the U.S. Air Force Medical Service began conducting routine, global, laboratory-based influenza surveillance. Air Force efforts expanded to DoD-wide in 1997. USAFSAM manages the surveillance program that includes global surveillance among DoD beneficiaries at over 80 sentinel sites (including deployed locations) and many non-sentinel sites (please see map on the left). Unique sentinel sites include three DoD overseas medical research laboratories (AFRIMS, NAMRU-6, USAMRU-K) and the US Army Public Health Command Region South (PHCR-S). These sites collect specimens from local residents in surrounding countries that may not otherwise be covered in existing surveillance efforts.

Since the 2006-2007 season, Landstuhl Regional Medical Center (LRMC) has served EUCOM as a USAFSAM contributing laboratory. The initiative seeks to provide more timely results and efficient transport of specimens.

For an expanded view of this report, visit our website. Also available on the website is a list of previous weekly surveillance reports, program information (including an educational briefing and instruction pamphlets for clinic staff), and an overview of historical data. Please visit the AFHSC/GEIS website for an overview of influenza surveillance at all collaborating organizations.

Errata:

Collaborating Partners

In addition to all participating DoD military sentinel sites, several collaborating partners (described above) may be further understood by reviewing the partner's website.



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